Doctor of Philosophy Program in Anatomy and Structural Biology (International Program)
Revised Program in 2022

1. Curriculum Name

Thai : หลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชากายวิภาคศาสตร์และชีววิทยาโครงสร้าง (หลักสูตรนานาชาติ)

English : Doctor of Philosophy Program in Anatomy and Structural Biology (International Program)

2. Name of Degree

Full Title	Thai	: ปรัชญาดุษฎีบัณฑิต (กายวิภาคศาสตร์และชีววิทยาโครงสร้าง)
Abbreviation	Thai	: ปร.ด. (กายวิภาคศาสตร์และชีววิทยาโครงสร้าง)
Full Title	English	: Doctor of Philosophy (Anatomy and Structural Biology)
Abbreviation	English	: Ph.D. (Anatomy and Structural Biology)

3. Philosophy, Justification, and Objectives of the Curriculum

3.1 Philosophy and Justification of the Curriculum

The Doctor of Philosophy program aims at producing graduates who have expertise in creating new body of knowledge of Anatomy and Structural Biology via research activities, with a moral and ethical responsibility in the work.

3.2 Objectives of the Program

At the end of the program, a graduate will have characteristics in compliance with the the Office of the Higher Education Commission's standard criteria for graduate program as follows:

1) Having their moral behaviors and discipline, and be able to maintain moral integrity and ethics in academic and professional contexts;

2) Be knowledge able of the course content, substantial body of knowledge, and research processes; be able to demonstrate their understanding in the concept of research topics and their skills in the use of research instruments in the field of Anatomy and Structural Biology;

3) Analyze, criticize, synthesize, and evaluate scientific problems in a systematic and theoretical context; be able to design and carry out research projects to develop new knowledge and/or research innovation in the field of Anatomy and Structural Biology;

4) Having and develop responsible behavior and a good relationship with colleagues and communities; be able to playing roles of leader, follower, and co-operator effectively;

5) Having essential skills on numerical and statistical analysis and be able to use appropriate information and communication technology for effective data management and presentations

3.3 Program Learning Outcomes (PLOs)

1) Exhibit honest, disciplined, and punctual behaviors including complying with regulations; and maintain ethical standards in academic and research contexts.

2) Explain substantial body of knowledge, research processes, and the concept of research topics; and discuss on the latest developments including research techniques in Anatomy and Structural Biology.

3) Demonstrate their expertise in the use and application of research equipments in the field of Anatomy and Structural Biology.

4) Analyze, criticize, synthesize, and evaluate scientific problems in a systematic and theoretical context; and able to design and carry out research projects on their own, with wide and deep views in order to develop new knowledge and innovation in the field of Anatomy and Structural Biology.

5) Possess a good relationship, be responsible, receive and process feedback; and possess desirable roles of leader, follower, and co-operator effectively.

6) Analyze and process mathematical or statistical data involving in their research effectively, with the use of appropriate information and communication technology.

7) Utilize both oral and written communication skills to present their works effectively via oral presentations and publications to international scientific community.

4. Curriculum Implementation

4.1 Qualifications of Prospective Students

Plan 1 : Research Only

Plan 1.1 : For students with Master's degree:

(1) Hold a Master of Science degree in Anatomy, Anatomy and Structural Biology, Pathology, Physiology, Pharmacology, Microbiology, Biology, Medical Technology, or other related biological sciences from institutions which accredited by the Permanent Secretary, Ministry of Higher Education, Science, Research and Innovation

(2) Have cumulative GPA not less than 3.50

(3) Have at least 1 research article published in national or international journals, with their name as the first author

(4) Have an English Proficiency Examination score as the requirement of the Faculty of Graduate Studies, Mahidol University

(5) Applicants who do not meet the qualification criteria in items (2) - (4) may be considered for admission by the program executive committee and the Dean of the Faculty of Graduate Studies

Plan 2 : Courses work and Research

Plan 2.1 : For students with Master's degree:

(1) Hold a Master of Science degree in Anatomy, Anatomy and Structural Biology, Pathology, Physiology, Pharmacology, Microbiology, Biology, Medical Technology, or other related biological sciences from institutions which accredited by the Permanent Secretary, Ministry of Higher Education, Science, Research and Innovation

(2) Have cumulative GPA not less than 3.50, or have at least 1 research article published in national or international journals, with their name as the first author

(3) Have an English Proficiency Examination score as the requirement of the Faculty of Graduate Studies, Mahidol University

(4) Applicants who do not meet the qualification criteria in items (2) - (3) may be considered for admission by the program executive committee and the Dean of the Faculty of Graduate Studies

Plan 2.2 : For students with Bachelor's degree:

(1) Hold a Bachelor of Science degree, or hold a M.D., D.V.M., or D.D.S. from institutions which accredited by the Permanent Secretary, Ministry of Higher Education, Science, Research and Innovation

(2) Have cumulative GPA not less than 3.50

(3) Have an English Proficiency Examination score as the requirement of the Faculty of Graduate Studies, Mahidol University

(4) Applicants who do not meet the qualification criteria in items (2) – (3) may be considered for admission by the program executive committee and the Dean of the Faculty of Graduate Studies

5. Curriculum Structure

5.1 Number of credits

Plan 1 : Research Only

Plan 1.1 : For students with Master's degree: the number of credits to be studied throughout the program not less than 48 credits

Plan 2 : Courses work and Research

Plan 2.1 : For students with Master's degree

- For students with Master's degree in Anatomy, Anatomy and Structural Biology, or other biological fields: the number of credits to be studied throughout the program not less than 48 credits

Plan 2.2 : For students with Bachelor's degree

- For students with Bachelor's degree, M.D., D.V.M., or D.D.S.: the number of credits to be studied throughout the program not less than 72 credits

5.2 Curriculum Structure

The curriculum structure is set in compliance with Announcement of Ministry of Education on the subject of Criteria and Standards of Graduate Studies 2015, Ph.D. Degree, Plan 1 and plan 2 as below:

Plan 1 : Research only

Plan 1.1 : For graduate students with Master's degree:

Dissertation	48	credits
Total not less than	**48**	**credits**

Plan 2 : Courses work and research

Plan 2.1 : For students with Master's degree in Anatomy, Anatomy and Structural Biology, or other biological fields:

Required courses	6	credits
Elective courses not less than	6	credits
Dissertation	36	credits
Total not less than	**48**	**credits**

Plan 2.2 For students with Bachelor's degree, M.D., D.V.M., or D.D.S.:

Required courses	20	credits
Elective courses not less than	4	credits
Dissertation	48	credits
Total not less than	**72**	**credits**

6. Graduation Requirement

Plan 1 : Research Only

1) The duration of the study is in accordance with the study plan.

2) Students must complete dissertation for 48 credits and may attend additional courses following the advice from their advisor without credit counting. Total credits are not less than 48 credits.

3) Students must pass the English Competence Standard of Graduate Students, Mahidol University defined by the Faculty of Graduate Studies, Mahidol University.

4) Students must pass the qualifying examination.

5) Students must participate and pass in skill development activities of the Graduate Studies, Mahidol University

6) Students must present their dissertation and pass the defense examination from the examination committee appointed by the Faculuty of Graduate Studies, Mahidol University. The examination must be done orally and open to any interested persons.

7) Students' Dissertation or part of the Dissertation must be published or at least accepted to be published in at least 2 international peer-reviewed academic articles following the announcements of the Higher Education Commission on criteria for publication on academic journals and the Faculty of Graduate Studies, Mahidol University.

Plan 2 : Couses Work and Research

1) The duration of the study is in accordance with the study plan.

2) Students must complete their courses as stated in the curriculum:

- For students with Master's degree in Anatomy, Anatomy and Structural Biology, or other fields, student must complete their courses with not less than 12 credits and dissertation for 36 credits. Total credits are not less than 48 credits.

- For students with Bachelor's degree, M.D., D.V.M., or D.D.S student must complete their courses with not less than 24 credits and dissertation for 48 credits. Total credits are not less than 72 credits.

3) Students must obtain cumulative grade point average of not less than 3.00.

4) Students must pass the English Competence Standard of Graduate Students, Mahidol University defined by the Faculty of Graduate Studies, Mahidol University.

5) Students must pass the qualifying examination.

6) Students must participate and pass in skill development activities of the Faculty of Graduate Studies, Mahidol University.

7) Students must present their dissertation and pass the defense examination from the examination committee appointed by the Faculty of Graduate Studies, Mahidol University. The examination must be done orally and open to any interested persons.

8) Students' Dissertation or part of the Dissertation must be published or at least accepted to be published in at least 1 international peer-reviewed academic article following the announcements of the Higher Education Commission on criteria for publication on academic journals and the Faculty of Graduate Studies, Mahidol University.

7. Work of Graduates

Graduates who hold doctorates in Anatomy and Structural Biology are able to work as the following careers;

1. Specialist in Anatomy and Structural Biology
2. Academic instructors in Anatomy and Structural Biology
3. Researchers in Medical Science, and Scientists in Government and Private institutions, International and Non-governmental organizations
4. Regional and International consultants